

Differentiation - Quotient Rule

Date_____ Period____

Differentiate each function with respect to x .

1) $y = \frac{2}{2x^4 - 5}$

2) $f(x) = \frac{2}{x^5 - 5}$

3) $f(x) = \frac{5}{4x^3 + 4}$

4) $y = \frac{4x^3 - 3x^2}{4x^5 - 4}$

5) $y = \frac{3x^4 + 2}{3x^3 - 2}$

6) $y = \frac{4x^5 + 2x^2}{3x^4 + 5}$

7) $y = \frac{4x^5 + x^2 + 4}{5x^2 - 2}$

8) $y = \frac{3x^4 + 5x^3 - 5}{2x^4 - 4}$

$$9) \ y = \frac{x^3 - x^2 - 3}{x^5 + 3}$$

$$10) \ y = \frac{x^4 + 6}{3 - 4x^{-4}}$$

$$11) \ y = \frac{4x^4 - 4x^2 + 5}{\frac{5}{2x^3 + 3}}$$

Critical thinking question:

- 12) A classmate claims that $\left(\frac{f}{g}\right)' = \frac{f'}{g'}$ for any functions f and g . Show an example that proves your classmate wrong.